

# Company Overview

2019



# Our Vision

Apply our innovative device technology to accelerate SiC adoption, enabling our customers to deliver industry transforming levels of power efficiency to society's most advanced applications



Mobility



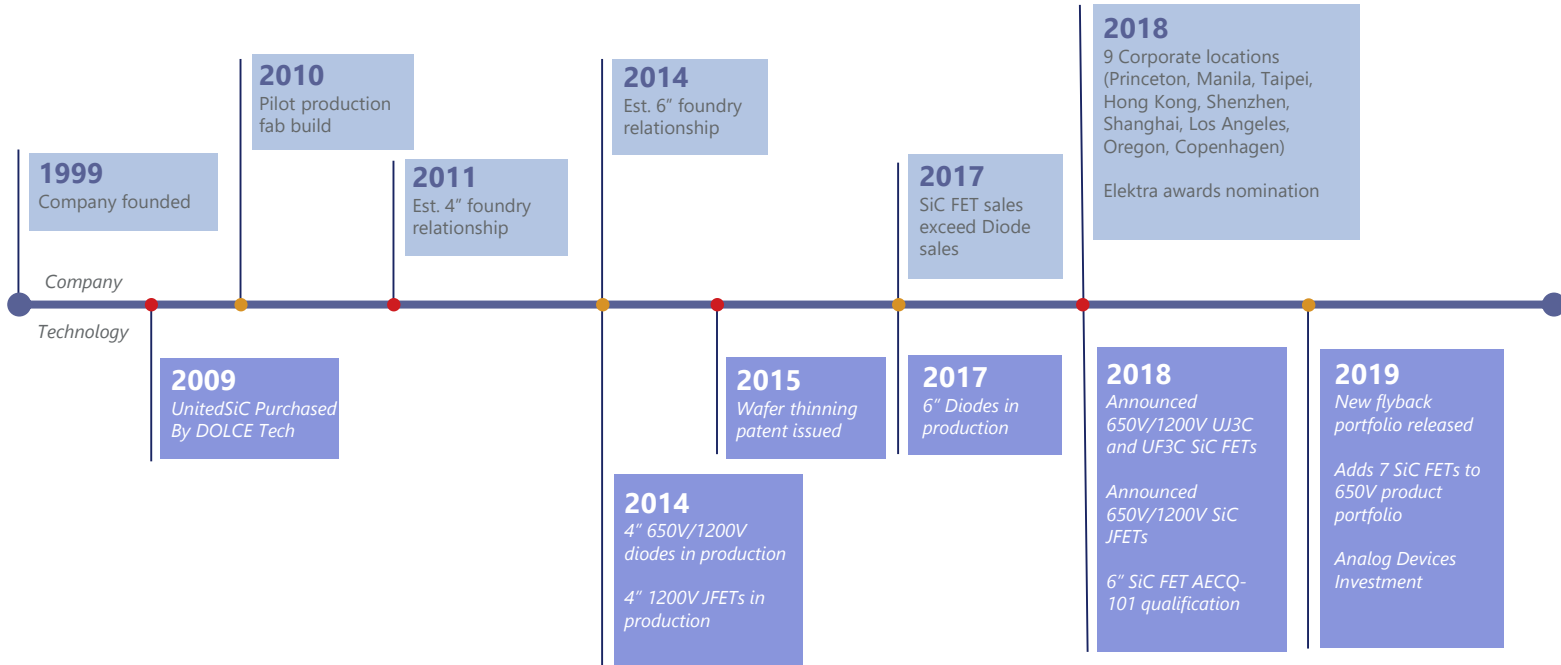
IT Infrastructure



Renewable Energy



# UnitedSiC history



25 issued patents



100/150mm foundry partners



Well funded



Broadest SiC product portfolio

# Power products for mainstream applications



Automotive

- On Board Chargers
- DC-DC Converters
- Traction Inverters



Battery Charging

- Fast DC Charging
- Wireless Charging
- Industrial Chargers



IT Infrastructure

- Power Factor Correction
- DC-DC Converters

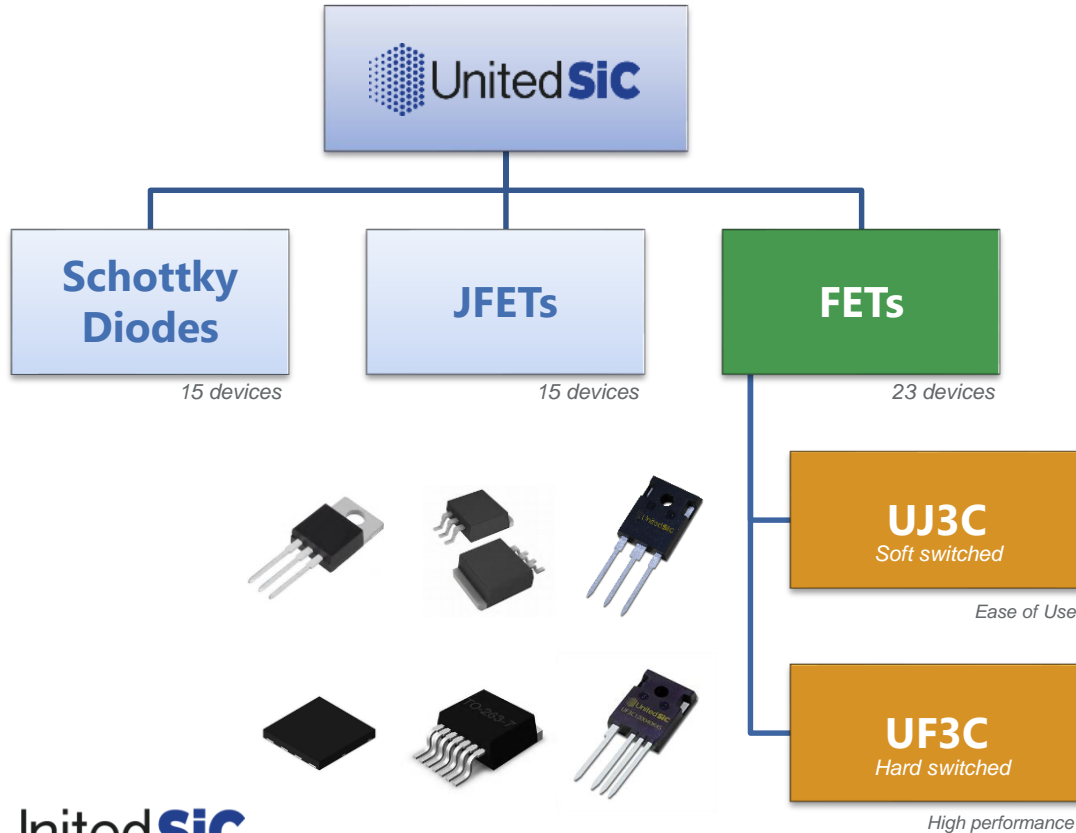


Renewables

- Solar Inverters
- Energy Storage
- Wind



# SiC Product Portfolio



- *Co-packaged high-performance Gen3 SiC JFETs with cascode-optimized MOSFET*
- *Only standard gate drive SiC*

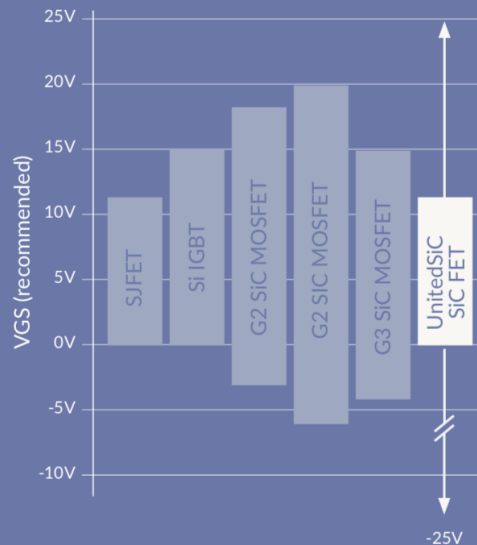
- *650V and 1200V*
- *Low on-resistance RDS(on)*
- *Excellent reverse recovery*
- *Excellent body diode performance ( $V_f < 2V$ )*
- *Drive with any Si and/or SiC gate drive voltage*
- *Superior thermal performance*
- *ESD protection*

# Upgrading your design

Easy, direct drop-in functionality

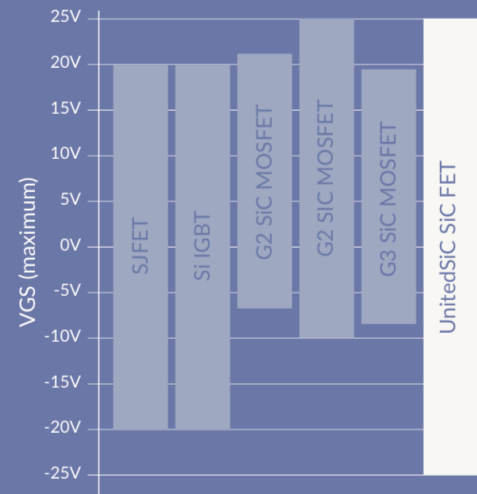
- Simple upgrade from Si IGBTs, Si FETs, SiC MOSFETs or Si superjunction devices
- No change in gate drive voltage
- Excellent body diode performance ( $V_f < 2V$ )
- Immediate improvement in efficiency and reliability

### 12V/0V Operation Simplifies Upgrading



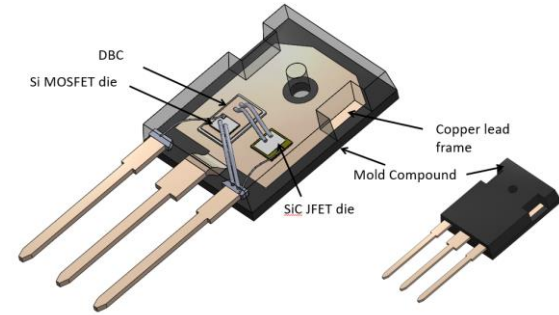
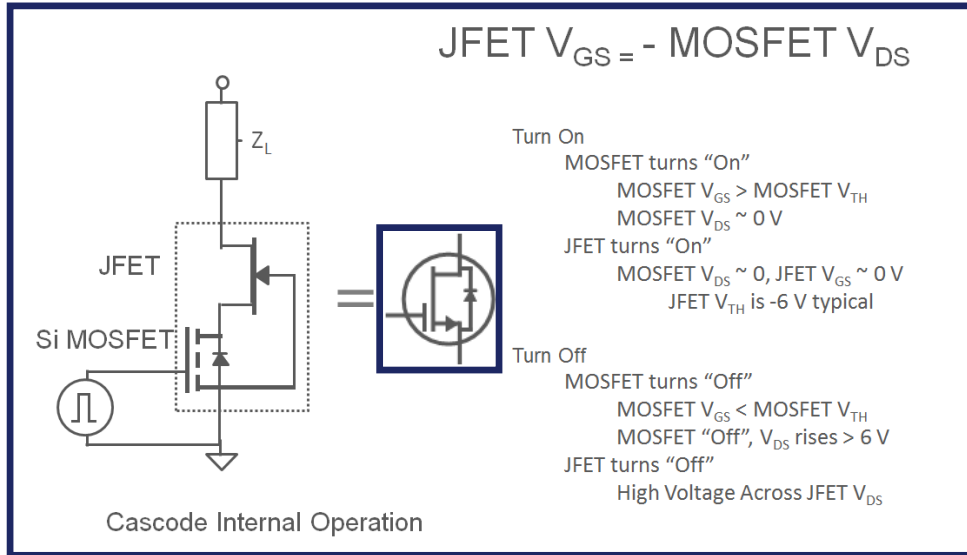
Innovative cascode configuration enables Si and SiC gate voltage compatibility

### Superior Gate and ESD Protection



Integrated clamping diode protects gates from  $|25V|$  and adds ESD protection

# Optimal performance with SiC Cascode FET

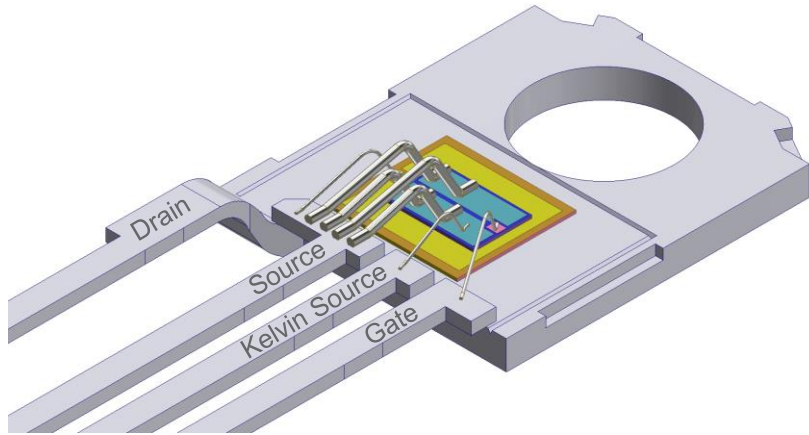


Side By Side  
Cascode



Stacked Cascode

# Better efficiency, less losses with Kelvin packaging



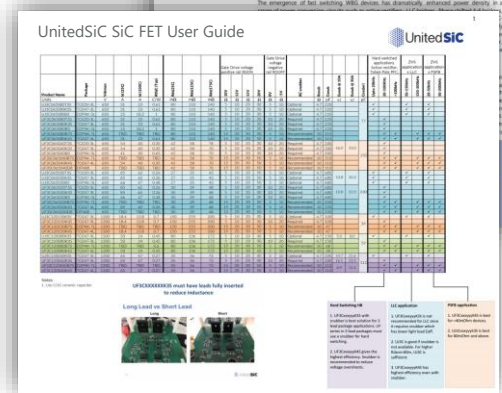
- Added fourth pin acts as Kelvin source to effectively reduce the parasitic inductance
- Delivers improved efficiency by reducing switching losses



TO247-4L



TO247-7L





# Upgrading existing design with drop-in replacement solution

Your Current Solution	UnitedSiC Solution	Benefits and Tips
<b>Conventional SiC MOSFET (gate drive -5 to +20V)</b>	<i>UnitedSiC SiC FET can serve as replacement. Gate drive -5V to +20V also works.</i>	<ul style="list-style-type: none"> <li>• Better or same efficiency</li> <li>• Rgon/Rgoff adjustment may be needed</li> </ul>
<b>Si 1200V MOSFETs</b>	<i>UnitedSiC 1200V SiC FET can serve as replacement</i>	<ul style="list-style-type: none"> <li>• Boosts efficiency</li> <li>• UnitedSiC FET works with existing Si MOSFET gate drive</li> </ul>
<b>Si high speed IGBTs</b>	<i>UnitedSiC SiC FET can serve as replacement for IGBT+FRD co-pack</i>	<ul style="list-style-type: none"> <li>• Boosts efficiency</li> <li>• Since UnitedSiC SiC FET switches much faster, circuit re-layout likely needed.</li> <li>• No problem with SCWT even at high gate bias</li> </ul>
<b>Si high speed super-junction MOSFETs</b>	<i>UnitedSiC 650V SiC FET can serve as replacement for high speed super-junction MOSFETs</i>	<ul style="list-style-type: none"> <li>• Boosts efficiency</li> <li>• Similar Coss, but much lower Eoss.</li> <li>• Much better diode Qrr with UnitedSiC SiC FET</li> </ul>

# UnitedSiC SiC Products

Deliver industry-transforming levels of power efficiency

- Industry's most efficient, highest performance SiC FETs, JFETs and Schottky diodes
- Easy to use, drop-in replacement capable
- Cost effective solutions
- Leadership SiC technology
- Fully supported by WW direct & distribution sales support



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